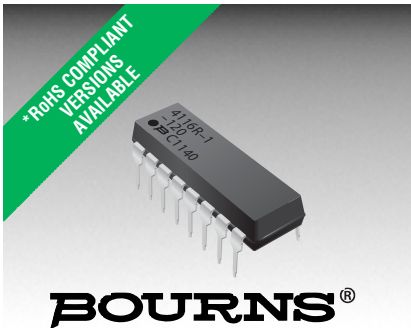




## Features

- RoHS compliant\* versions available (see How to Order “Termination” option)
- Compatible with automatic insertion equipment
- Superior package integrity
- **Now available with improved tolerance to  $\pm 0.5\%$**

For information on specific applications,  
download Bourns' application notes:

- DRAM Applications
- Dual Terminator Resistor Networks
- R/2R Ladder Networks
- SCSI Applications

## 4100R Series - Thick Film Molded DIPs

## Product Characteristics

Resistance Range ..... 10 ohms to 10 megohms  
Maximum Operating Voltage ..... 100 V  
Temperature Coefficient of Resistance  
50  $\Omega$  to 2.2 M $\Omega$  .....  $\pm 100$  ppm/ $^{\circ}$ C  
below 50  $\Omega$  .....  $\pm 250$  ppm/ $^{\circ}$ C  
above 2.2 M $\Omega$  .....  $\pm 250$  ppm/ $^{\circ}$ C  
TCR Tracking ..... 50 ppm/ $^{\circ}$ C  
maximum; equal values  
Resistor Tolerance ..... See circuits  
Operating Temperature  
..... -55  $^{\circ}$ C to +125  $^{\circ}$ C  
Insulation Resistance  
..... 10,000 megohms minimum  
Dielectric Withstanding Voltage  
..... 200 VRMS  
Lead Solderability ..... Meet requirements  
of MIL-STD-202 Method 208

## Environmental Characteristics

|                                   |         |
|-----------------------------------|---------|
| TESTS PER MIL-STD-202.....        | ΔR MAX. |
| Short Time Overload.....          | ±0.25 % |
| Load Life.....                    | ±1.00 % |
| Moisture Resistance.....          | ±0.50 % |
| Resistance to Soldering Heat..... | ±0.25 % |
| Terminal Strength.....            | ±0.25 % |
| Thermal Shock.....                | ±0.25 % |

## Physical Characteristics

Flammability ..... Conforms to UL94V-0  
Lead Frame Material  
.....Copper, solder coated  
Body Material..... Novolac epoxy

## How To Order

**41 14 R - 1 - 152**

Model \_\_\_\_\_  
(41 = Molded DIP)

Number of Pins \_\_\_\_\_

Physical Configuration \_\_\_\_\_  
(R = Thick Film Low Profile)

Electrical Configuration \_\_\_\_\_

- 1 = Isolated
- 2 = Bussed
- 3 = Dual Terminator

Resistance Code \_\_\_\_\_

- First 2 digits are significant
- Third digit represents the number of zeros to follow.

Resistance Tolerance \_\_\_\_\_

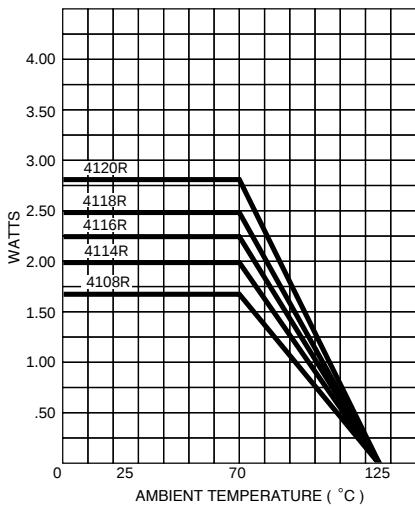
- Blank =  $\pm 2\%$  (see "Resistance Tolerance" on next page for resistance range)
- F =  $\pm 1\%$  (100 ohms - 1 megohm)
- D =  $\pm 0.5\%$  (100 ohms - 1 megohm)

Terminations \_\_\_\_\_

- LF = Tin-plated (RoHS compliant version)
- Blank = Tin/Lead-plated

Contact factory for other available options.

### Package Power Temp. Derating Curve

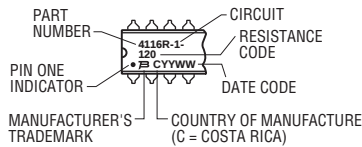


### Package Power Rating at 70 °C

|            |            |
|------------|------------|
| 4108R..... | 1.69 watts |
| 4114R..... | 2.00 watts |
| 4116R..... | 2.25 watts |
| 4118R..... | 2.50 watts |
| 4120R..... | 2.80 watts |

## Typical Part Marking

Represents total content. Layout may vary.



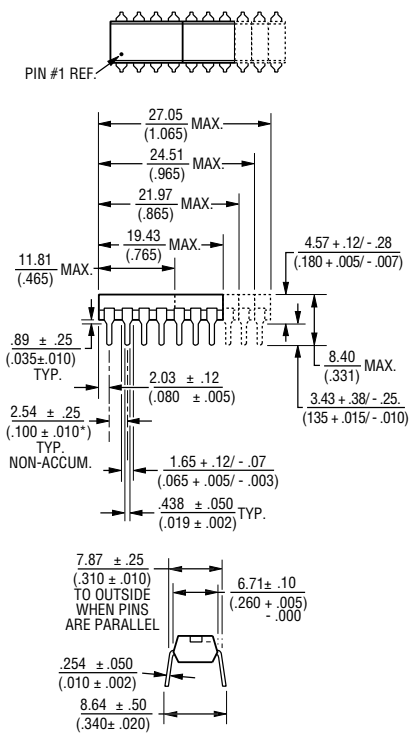
For Standard Values Used in  
Capacitors, Inductors, and Resistors,  
[click here.](#)



**WARNING Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
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## Product Dimensions



Governing dimensions are in metric. Dimensions in parentheses are inches and are approximate.

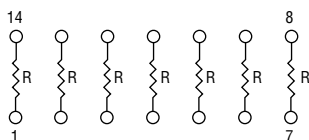
\*Terminal centerline to centerline measurements made at point of emergence of the lead from the body.

# 4100R Series - Thick Film Molded DIPs

**BOURNS®**

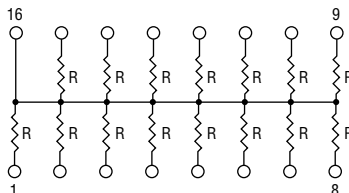
## Isolated Resistors (1 Circuit)

**Model 4108R-1-RC**  
(4 Isolated Resistors)  
**Model 4114R-1-RC**  
(7 Isolated Resistors)  
**Model 4116R-1-RC**  
(8 Isolated Resistors)  
**Model 4118R-1-RC**  
(9 Isolated Resistors)  
**Model 4120R-1-RC**  
(10 Isolated Resistors)



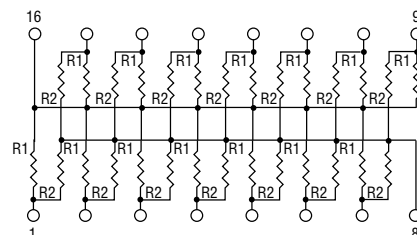
## Bussed Resistors (2 Circuit)

**Model 4108R-2-RC**  
(7 Resistors, Pin 8 Common)  
**Model 4114R-2-RC**  
(13 Resistors, Pin 14 Common)  
**Model 4116R-2-RC**  
(15 Resistors, Pin 16 Common)  
**Model 4118R-2-RC**  
(17 Resistors, Pin 18 Common)  
**Model 4120R-2-RC**  
(19 Resistors, Pin 20 Common)



## Dual Resistors (3 Circuit)

**Model 4108R-3-R1/R2**  
**Model 4114R-3-R1/R2**  
**Model 4116R-3-R1/R2 (shown)**  
**Model 4118R-3-R1/R2**  
**Model 4120R-3-R1/R2**



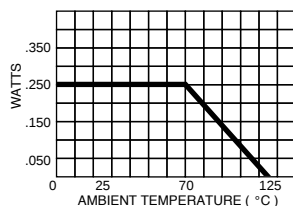
## Resistance Tolerance

10 ohms to 49 ohms.....  $\pm 1$  ohm  
50 ohms to 5 megohms.....  $\pm 2\%$ \*  
Above 5 megohms.....  $\pm 5\%$

## Power Rating per Resistor

At 70 °C ..... 0.250 watt

## Power Temperature Derating Curve



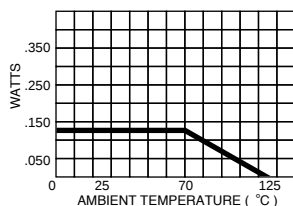
## Resistance Tolerance

10 ohms to 49 ohms.....  $\pm 1$  ohm  
50 ohms to 5 megohms.....  $\pm 2\%$ \*  
Above 5 megohms.....  $\pm 5\%$

## Power Rating per Resistor

At 70 °C ..... 0.125 watt

## Power Temperature Derating Curve



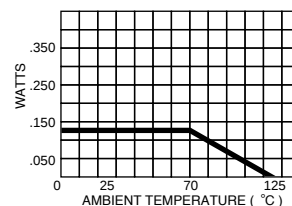
## Resistance Tolerance

Below 100 ohms.....  $\pm 2$  ohms  
100 ohms to 5 megohms.....  $\pm 2\%$ \*  
Above 5 megohms.....  $\pm 5\%$

## Power Rating per Resistor

At 70 °C ..... 0.125 watt

## Power Temperature Derating Curve



## Popular Resistance Values (1, 2 Circuits)\*\*

| Ohms | Code | Ohms  | Code | Ohms   | Code | Ohms    | Code | Ohms      | Code |
|------|------|-------|------|--------|------|---------|------|-----------|------|
| 10   | 100  | 180   | 181  | 1,800  | 182  | 15,000  | 153  | 120,000   | 124  |
| 22   | 220  | 220   | 221  | 2,000  | 202  | 18,000  | 183  | 150,000   | 154  |
| 27   | 270  | 270   | 271  | 2,200  | 222  | 20,000  | 203  | 180,000   | 184  |
| 33   | 330  | 330   | 331  | 2,700  | 272  | 22,000  | 223  | 220,000   | 224  |
| 39   | 390  | 390   | 391  | 3,300  | 332  | 27,000  | 273  | 270,000   | 274  |
| 47   | 470  | 470   | 471  | 3,900  | 392  | 33,000  | 333  | 330,000   | 334  |
| 56   | 560  | 560   | 561  | 4,700  | 472  | 39,000  | 393  | 390,000   | 394  |
| 68   | 680  | 680   | 681  | 5,600  | 562  | 47,000  | 473  | 470,000   | 474  |
| 82   | 820  | 820   | 821  | 6,800  | 682  | 56,000  | 563  | 560,000   | 564  |
| 100  | 101  | 1,000 | 102  | 8,200  | 822  | 68,000  | 683  | 680,000   | 684  |
| 120  | 121  | 1,200 | 122  | 10,000 | 103  | 82,000  | 823  | 820,000   | 824  |
| 150  | 151  | 1,500 | 152  | 12,000 | 123  | 100,000 | 104  | 1,000,000 | 105  |

\* Add "F" after resistance code for  $\pm 1\%$  tolerance available from 100  $\Omega$  through 1M  $\Omega$ , or add "D" after resistance code for  $\pm 0.5\%$  tolerance available from 100  $\Omega$  through 1M  $\Omega$ .

Part number suffix examples: -103 = 10K  $\Omega$ ,  $\pm 2\%$ ; -103F = 10K  $\Omega$ ,  $\pm 1\%$ ; -103D = 10K  $\Omega$ ,  $\pm 0.5\%$

\*\* Non-standard values available, within resistance range.

## Popular Resistance Values (3 Circuit)\*\*

| Resistance     |                |                |                |
|----------------|----------------|----------------|----------------|
| Ohms           |                | Code           |                |
| R <sub>1</sub> | R <sub>2</sub> | R <sub>1</sub> | R <sub>2</sub> |
| 160            | 240            | 161            | 241            |
| 180            | 390            | 181            | 391            |
| 220            | 270            | 221            | 271            |
| 220            | 330            | 221            | 331            |
| 330            | 390            | 331            | 391            |
| 330            | 470            | 331            | 471            |
| 3,000          | 6,200          | 302            | 622            |

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